In the claims:

1 - 4. (Cancelled)

5. (Currently amended) The method of Claim [[1]] 8 wherein said isolated nanowires of the at least two materials comprise alternating regions of a first material and a second material, and wherein said matrix comprises a third material.

6. (Currently amended) The method of Claim [[5]] 8 wherein said first material is selected from the group consisting of silicon, germanium, GaAs, GaP, InAs, InP, mixed III-V compound semiconductor materials, CdS, CdTe, and mixed II-VI compound semiconductor materials, wherein said second material is selected from the group consisting of silicon, germanium, GaAs, GaP, InAs, InP, mixed III-V compound semiconductor materials, CdS, CdTe, and mixed II-VI compound semiconductor materials, and wherein said first material is different than said second material.

7. (Currently amended) The method of Claim [[6]] 8 wherein said third material is selected from the group consisting of silicon, germanium, GaAs, GaP, InAs, InP, mixed III-V compound semiconductor materials, CdS, CdTe, mixed II-VI compound semiconductor materials, oxides, nitrides, and oxynitrides, and wherein said third material may be the same or different than either said first material or said second material.

8. (Currently amended) A method of controllably forming a three-dimensional assembly of isolated nanowires, each nanowire comprising at least two materials within a matrix of an other material, said method comprising:

providing a substrate;

forming a two-dimensional catalyst array on a major surface of said substrate, ~~The method of Claim 1~~ wherein said step of forming said catalyst array comprises:

providing a mold with nanoscale protrusions forming all the individual elements of a desired pattern;

coating said protrusions with a material containing said catalyst;

providing a substrate; and

transferring said catalyst to a major surface of said substrate, said major surface comprising a non-catalytic surface, to form a pattern of said catalyst on said major surface of said substrate;

controllably growing in a third dimension an array of said nanowires corresponding with said catalyst array, said nanowires each comprising said at least two materials; and

forming the matrix of the other material that fills in spaces between said nanowires.

9. (Currently amended) A method of controllably forming a three-dimensional assembly of isolated nanowires, each nanowire comprising at least two materials within a matrix of an other material, said method comprising:

providing a substrate;

forming a two-dimensional catalyst array on a major surface of said substrate, ~~The method of Claim 1~~ wherein said step of forming said catalyst array comprises:

imprinting a first line of material over a layer of said catalyst material;

etching to remove catalyst material where not protected;

imprinting a second line of material orthogonal to said first line; and

etching to remove catalyst material where not protected, so that said catalyst only remains where protected by both imprints;

controllably growing in a third dimension an array of said nanowires corresponding with said catalyst array, said nanowires each comprising said at least two materials; and

forming the matrix of the other material that fills in spaces between said nanowires.

10. (Currently amended) The method of Claim [[1]] 9 wherein said step of growing said array of nanowires comprises:

introducing a gaseous source containing at least one of the at least two materials; and

allowing said gaseous source to react with said catalyst and diffuse therethrough or therearound, thereby causing precipitation of said at least one of the at least two materials, thereby forming said nanowires.

11. (Currently amended) The method of Claim [[10]] 5 wherein two materials are used to form said nanowires having alternating regions of a first material and a second material by:

introducing a first gaseous source containing said first material;

allowing said first gaseous source to react with said catalyst and diffuse therethrough, thereby causing precipitation of said first material, thereby forming one segment;

introducing a second gaseous source containing said second material;

allowing said second gaseous source to react with said catalyst and diffuse therethrough, thereby causing precipitation of said second material, thereby forming a second segment; and

alternating said first gaseous source and said second gaseous source to thereby form said nanowire comprising said alternating regions.

12. (Original) The method of Claim 11 wherein one of said gaseous sources comprises silane and said material precipitated is silicon and wherein another of said gaseous sources comprises germane and said material precipitated is germanium.

13. (Currently amended) The method of Claim [[1]] 9 wherein said step of forming said matrix comprises a non-catalytic method.

14. (Original) The method of Claim 13 wherein said matrix is formed by chemical vapor deposition or by directional filling using physical vapor deposition or by high-density plasma-enhanced chemical vapor deposition.

15. (Cancelled)

16. (Currently amended) The method of Claim [[15]] 19 wherein said substrate comprises silicon, said nanowires comprise alternating regions of germanium and silicon, and said matrix comprises silicon.

17. (Currently amended) The method of Claim [[15]] 19 wherein said catalyst array comprises a metal that catalyzes growth of said nanowires from vapors comprising precursors of said two materials.

18. (Original) The method of Claim 17 wherein said metal comprises gold and wherein said vapors comprise germane and silane, alternately introduced to be catalyzed by said gold to form said alternating regions of germanium and silicon.

19. (Currently amended) A method of controllably forming a three-dimensional assembly of isolated nanowires of two materials within a matrix of one of said two materials, said method comprising:

providing a substrate;

forming a two-dimensional catalyst array on a major surface of said substrate, ~~The method of Claim 15~~ wherein said step of forming said catalyst array comprises:

providing a mold with nanoscale protrusions forming all the individual elements of a desired pattern;

coating said protrusions with a material containing said catalyst;

providing a substrate; and

transferring said catalyst to a major surface of said substrate, said

major surface comprising a non-catalytic surface, to form a pattern of said catalyst on said major surface of said substrate;

controllably growing in a third dimension an array of said nanowires corresponding with said catalyst array, said nanowires each comprising alternating regions of said two materials; and

forming a matrix of one of said materials that fills in spaces between said nanowires.

20. (Currently amended) The method of Claim [[15]] 19 wherein said step of growing said array of nanowires comprises:

introducing a first gaseous source containing a first material;

allowing said first gaseous source to react with said catalyst and diffuse therethrough, thereby causing precipitation of said first material, thereby forming one segment;

introducing a second gaseous source containing a second material;

allowing said second gaseous source to react with said catalyst and diffuse therethrough, thereby causing precipitation of said second material, thereby forming a second segment; and

alternating said first gaseous source and said second gaseous source to thereby form said nanowire comprising said alternating regions.

21. (Original) The method of Claim 20 wherein one of said gaseous sources comprises silane and said material precipitated is silicon and wherein another of said gaseous sources comprises germane and said material precipitated is germanium.

22. (Currently amended) The method of Claim [[15]] 19 wherein said step of forming said matrix comprises a non-catalytic method.

23. (Original) The method of Claim 22 wherein said matrix is formed by chemical vapor deposition or by directional filling using physical vapor deposition or by highdensity plasma-enhanced chemical vapor deposition.

24 - 37. (Cancelled)

38. (Currently amended) The method of Claim [[1]] 9 wherein two or more layers of said matrix are formed.

39 – 40. (Cancelled)